

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) A device for compressing a list of final destination addresses for a multicast message, wherein each final destination address in said list represents a different final destination host, said device comprising:

a detector that detects a common prefix in at least two different final destination addresses from said list of final destination addresses,

a generator that generates a suffix list for final destination addresses from said list of final destination addresses that are detected to have a common prefix, wherein said suffix list represents the non-identical portions of said final destination addresses detected to have a common prefix, and

an adder that adds said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses.

2. (*Previously Presented*) The device for compressing according to claim 1, wherein said list of destination addresses comprises Internet Protocol addresses.

3. *(Previously Presented)* The device for compressing according to claim 1, wherein said list of destination addresses comprises Internet Protocol addresses and other compound destination addresses.

4. *(Previously Presented)* The device for compressing according to claim 1, wherein said list of destination addresses comprises previously compressed compound destination addresses.

5. *(Previously Presented)* The device for compressing according to claim 1, wherein said device is incorporated in a host of a communications network having connectionless multicast transmission capabilities.

6. *(Previously Presented)* The device for compressing according to claim 1, wherein said device is incorporated in a router of a communications network having connectionless multicast forwarding capabilities.

7. *(Currently Amended)* A method for compressing a list of final destination addresses for a multicast message, wherein each final destination address in said list represents a different final destination host, said method comprises:

detecting a common prefix in at least two different final destination addresses from said list of final destination addresses,

generating a suffix list for final destination addresses from said list of final destination addresses that are detected to have a common prefix, wherein said suffix list represents the non-identical portions of said final destination addresses detected to have a common prefix, and

adding said suffix list to said common prefix to create a compound destination address consisting of compressed final destination addresses.

8. *(Cancelled)*.

9. *(Previously Presented)* A router according to claim 6, wherein said router further comprises:

a routing table memory, and

an addressing device to address said routing table memory via a compound address having the same format as said compound destination address.

10. *(Cancelled)*.

11. *(Previously Presented)* The device for compressing according to claim 1, wherein said detector detects octet-aligned prefixes.

12. *(Previously Presented)* The device for compressing according to claim 1, wherein said detector detects nibble-aligned prefixes.

13. (*Previously Presented*) The device for compressing according to claim 1, wherein said detector detects bit-aligned prefixes.

14. (*Previously Presented*) The method for compressing according to claim 7, wherein detecting a common prefix further comprises detecting octet-aligned prefixes.

15. (*Previously Presented*) The method for compressing according to claim 7, wherein detecting a common prefix further comprises detecting nibble-aligned prefixes.

16. (*Previously Presented*) The method for compressing according to claim 7, wherein detecting a common prefix further comprises detecting bit-aligned prefixes.

17. (*Previously Presented*) The device for compressing according to claim 1, wherein said detector, said generator and said adder iteratively compress said list of final destination addresses.

18. (*Previously Presented*) The method for compressing according to claim 7, wherein the detection of a common prefix, the generation of a suffix list and the adding of the suffix list to the common prefix is iteratively performed for said list of final destination addresses.

19. (*Previously Presented*) A communications network comprising:

a host that generates multicast packets, wherein said host comprises a device for compressing a list of final destination addresses according to claim 1, and forwards compressed ;
and

a router connected to said host, wherein said router receives a compound destination address created by said host and derives the common prefixes from said compound destination address to determine the next hop for each common prefix.

20. (*Previously Presented*) The communications network according to claim 19, wherein said router comprises a compression device for compressing a list of derived common prefixes and their respective suffixes, said device comprising:

a generator that generates a suffix list that represents non-identical portions for each of said common prefixes derived from said received compound destination address, and

an adder that adds said respective suffix list to each of said derived common prefixes to create a Previously Presented compound destination address consisting of compressed final destination addresses.